

**WHAT IS CLAIMED IS:**

1. A method for receiver-characterized power setting in a cellular communication system, comprising the steps of:

5        setting a first transmission power for a first connection with a first type of mobile station, wherein the first connection targets a first radio channel quality; and

      setting a second transmission power for a second connection with a second type of mobile station, wherein the second connection targets a second radio channel quality,

10        wherein the first type of mobile station uses a first type of speech unit that is less robust to poor radio channel quality than a second type of speech unit used by the second type of mobile station, and

      wherein the first and second transmission powers are set according to at least a type of speech unit used by the first and second types of mobile stations, respectively, when transmitting speech.

2. The method of claim 1, wherein said second radio channel quality is substantially lower than said first radio channel quality.

3. The method of claim 1, wherein the first and second radio channel qualities correspond to a desired carrier-to-interference (C/I) ratio.

20        4. The method of claim 1, wherein the first and second types of mobile stations share substantially the same frequency band for the first and second connections, respectively.

5. The method of claim 1, wherein frequency hopping allocations are used for the first and second connections.

6. The method of claim 1, wherein the second radio channel quality is mapped from a corresponding first radio channel quality.

5 7. The method of claim 6, wherein a user-perceived quality of said second radio channel quality for said second type of mobile station corresponds to substantially the same user-perceived quality of the first radio channel quality for said first type of mobile station.

10 8. The method of claim 1, wherein a minimum power used for the second connection with the second type of mobile station is lower than a minimum power used for the first connection with the first type of mobile station.

9. The method of claim 1, wherein the first type of speech unit used by the first type of mobile station is an Enhanced Full Rate (EFR) voice codec unit.

15 10. The method of claim 1, where the second type of speech unit used by the second type of mobile station is an Adaptive Multi-Rate (AMR) voice codec unit.

20 11. The method of claim 1, further comprising the step of:  
setting transmission powers for communicating associated control signaling information with said second type of mobile station to substantially the same transmission powers used for communicating associated control signaling information with said first type of mobile station.

12. The method of claim 11, wherein the transmission powers for communicating associated control signaling information with said second type of mobile station correspond to a maximum allowed power of said first type of mobile station.

13. The method of claim 12, wherein said associated control signaling information includes handover signaling information.

14. The method of claim 1, further comprising the steps of:  
setting transmission powers for communicating associated control signaling information with said second type of mobile station on downlink connections to substantially the same transmission powers used for communicating associated control signaling information with said first type of mobile station on downlink connections; and

setting transmission powers for communicating associated control signaling information with said first and second types of mobile stations on uplink connections according to at least a type of speech unit used by the first and second types of mobile stations, respectively.

15. The method of claim 14, wherein said associated control signaling information includes handover signaling information.

16. A system for receiver-characterized power setting in a cellular communication system, comprising:

a first type of mobile station, wherein the first type of mobile station includes a first type of speech unit, wherein a first connection with the first type of mobile station targets a first radio channel quality;

a second type of mobile station, wherein the second type of mobile station includes a second type of speech unit, wherein a second connection with the second type of mobile station targets a second radio channel quality,

wherein the first type of speech unit of the first type of mobile station is less robust to poor radio channel quality than the second type of speech unit of the second type of mobile station, and

wherein transmission powers for the first and second connections are set according to at least a type of speech unit used by the first and second types of mobile stations, respectively, when transmitting speech.

17. The system of claim 16, further comprising:

a base station that communicates with the first and second types of mobile stations.

18. The system of claim 16, wherein the second radio channel quality is substantially lower than the first radio channel quality.

19. The system of claim 16, wherein the first and second radio channel qualities correspond to a desired carrier-to-interference (C/I) ratio.

20. The system of claim 16, wherein the first and second types of mobile stations share substantially the same frequency band for the first and second connections, respectively.

21. The system of claim 16, wherein frequency hopping allocations are used for the first and second connections.

22. The system of claim 16, wherein the second radio channel quality is mapped from a corresponding first radio channel quality.

23. The system of claim 22, wherein a user-perceived quality of said second radio channel quality for said second type of mobile station corresponds to substantially the same user-perceived quality of the first radio channel quality for said first type of mobile station.

24. The system of claim 16, wherein a minimum power used for the second connection with the second type of mobile station is lower than a minimum power used for the first connection with the first type of mobile station.

25. The system of claim 16, wherein the first type of speech unit used by the first type of mobile station is an Enhanced Full Rate (EFR) voice codec unit.

26. The system of claim 16, where the second type of speech unit used by the second type of mobile station is an Adaptive Multi-Rate (AMR) voice codec unit.

27. The system of claim 16, wherein transmission powers for communicating associated control signaling information with said second type of mobile station are set to substantially the same transmission powers used for communicating associated control signaling information with said first type of mobile station.

28. The system of claim 27, wherein the transmission powers for communicating associated control signaling information with said second type of mobile station correspond to a maximum allowed power of said first type of mobile station.

5 29. The system of claim 28, wherein said associated control signaling information includes handover signaling information.

30. The system of claim 29, wherein the transmission powers for communicating associated control signaling information with said second type of mobile station on downlink connections are set to substantially the same  
10 transmission powers used for communicating associated control signaling information with said first type of mobile station on downlink connections, and  
wherein transmission powers for communicating associated control signaling information with said first and second types of mobile stations on uplink  
connections are set according to at least a type of speech unit used by the first and  
15 second types of mobile stations, respectively.

31. The system of claim 30, wherein said associated control signaling information includes handover signaling information.